

Chapter 4, lecture 43, UV Unwrap window frame

In this lecture we are looking at how to UV-unwrap and apply textures to our models.

- Create a simple material to display the texture in the 3d viewport.
- Using Smart UV Projection to create a UV-map.
- The word seam can be hard to grasp because it has multiple meanings. We look at what it could mean.
- The same shortcut in Blender can have very different meaning depending on context.

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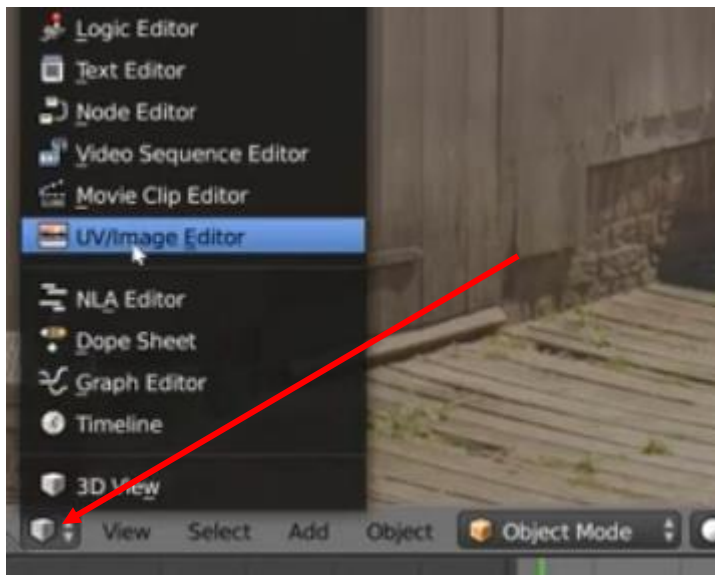
To start off we are going to UV-unwrap the models we created in the previous chapter. This is a very easy step to miss or forget and if you plan to duplicate your object and that object do not have UV-coordinates ready to go beforehand. You may spend a lot of time to unwrap all those duplicates or redo the work you just did. If you miss this step at some point, don't beat yourself up to bad. We all miss this at some point.

At the top right corner of the 3D viewport we will click, hold and drag to the left to create a duplicate of our 3D viewport editor within Blender. There is a corresponding handle in the bottom left corner of every editor in Blender to drag out a new window in the opposite direction. You can also drag up and down. To remove an editor, decide what editor will take up its space and drag from the corner of the editor that will be expanded over the edge into the editor you want to remove. A larger transparent arrow will appear to indicate what editor will go where.

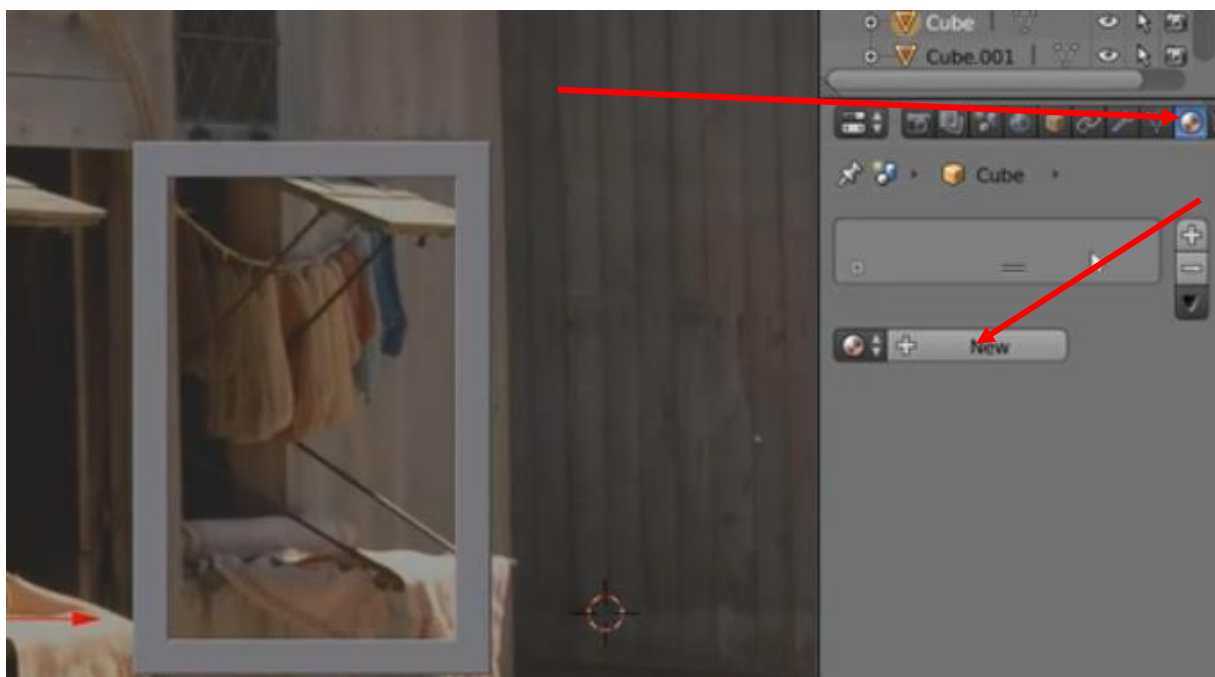


Click and hold at the red arrow and drag in the blue arrows direction.

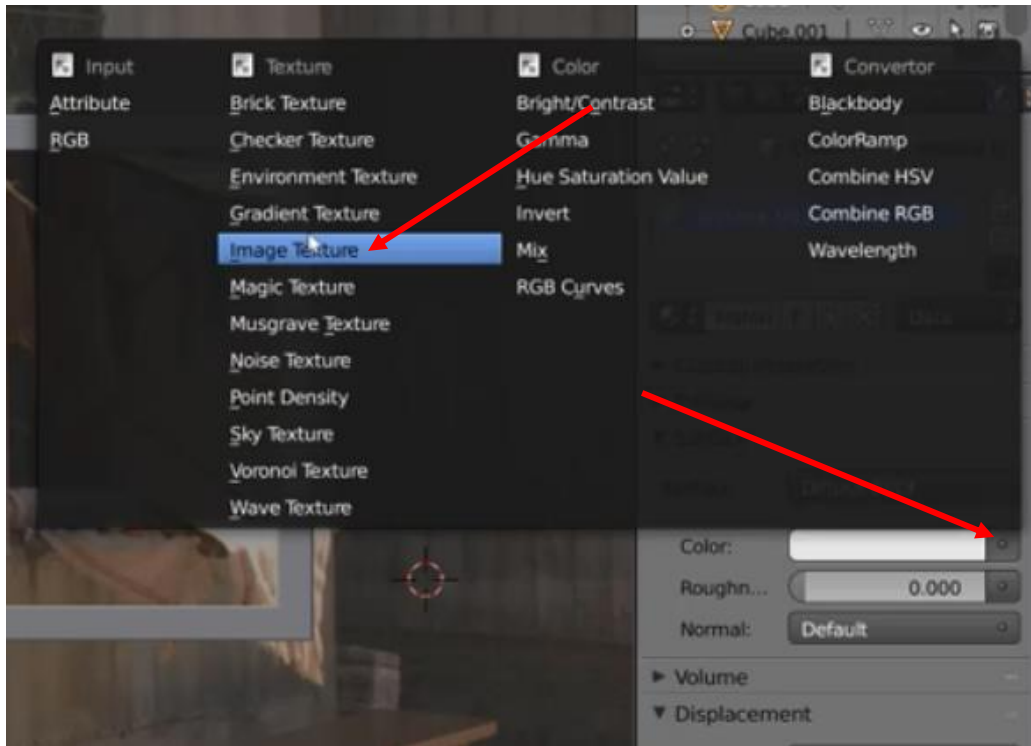
In every editor there is an “editor type” menu where you can select what editor will be shown in any given window. In the left 3D view, find this menu at the bottom left and set it to “UV/Image editor”.



We will select the wooden beam, go to the material tab in the properties and press “new”



Next to where it says “color” we will hit the “dot” icon next to it and select image texture from the list.

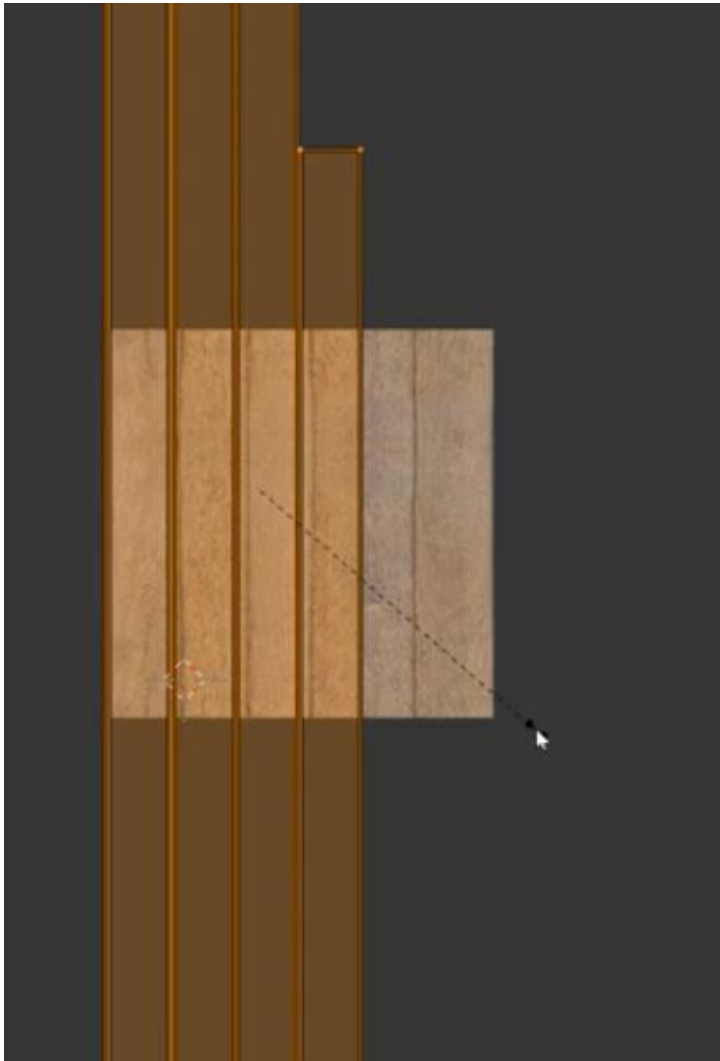


From there we hit open and browse for the texture. The texture used in the video tutorial is called “planks_4.png” and is available in the zip-file from Course content and lecture 39.

Now we are ready to start UV-unwrapping our models. Make sure that the scale of the object is set to 1 on all axis. If not, remember to use “**ctrl+A**” to apply the scale.

Blender has multiple ways to UV-unwrapping available for us. In this lesson we will explore the “Smart UV Project” method. Enter edit mode and make sure that the whole object is selected by tapping “**A**” once or twice. Then hit “**u**” to bring up the UV Mapping menu. Select “Smart UV Project” and make sure that the checkbox “Stretch” is not selected. If enabled this setting will stretch the UV-coordinates so that it fits well within the image texture. The problem with this is that the relation between x and y coordinates in the UV/image editor will not be the same as in our 3d viewport. It will be stretched in some way according to the image and this is seldom desired.

In the UV/Image editor you can use the exact same shortcut keys for selecting and transforming as in the 3D viewport. Box select with **B** and scale the whole UV-layout so that the width of one side is as wide as one plank in the texture. This will map the texture close to real world scale.



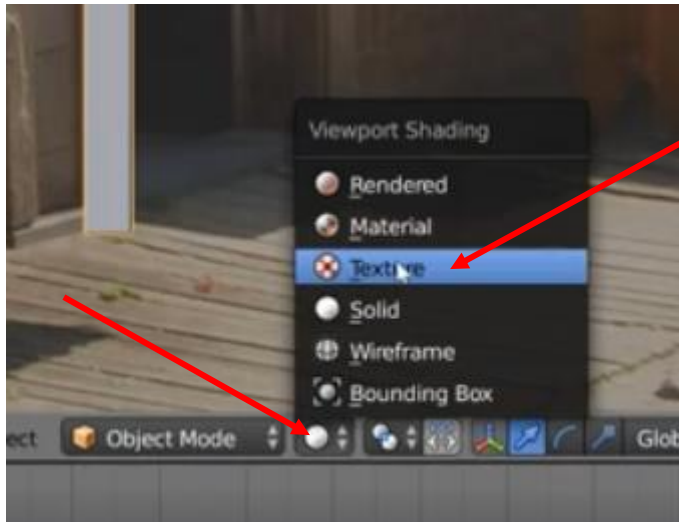
In the UV image editor, we use a term called UV-island. A UV-island is a set of UV-coordinates that is not attached to anything but itself. To select an entire island, select any part of the island and hit **“ctrl+L”**.

Now, before we continue we must take a moment and discuss the word seam. It may have three different meanings.

- A seam can be a marked edge in the 3d viewport. Select an edge and hit **“ctrl+E”** and select **“mark seam”** and the edge will be marked in red. This is a seam and will be split when we use the **“unwrap”** method to UV-unwrap.
- A seam can be a place where two textures meet hard and unnaturally. For instance, a face may have a wood texture applied to it and the face next to it may have a concrete texture and there is no natural transition between the two. There is just a sharp line visible to divide the two. This is also a seam.
- A seam may also be a natural divider in the actual texture that is unwanted in the middle of a face. This is the kind of seam we are dealing with in the video tutorial where the wood planks are divided in the texture.

Be aware that a seam may be any of these different things and they are all well within the discussion of UV-unwrapping. Make sure that you know which one is communicated when you learn or communicate with other artists.

When your UV-map is scaled up so that the width of a face is as wide as a wood beam in the texture go to the 3D viewport and set the “viewport shading” to “texture”



Move around your object and look at your texture, make sure that the scale of the woodgrain is close to a real-world scale on the beam.

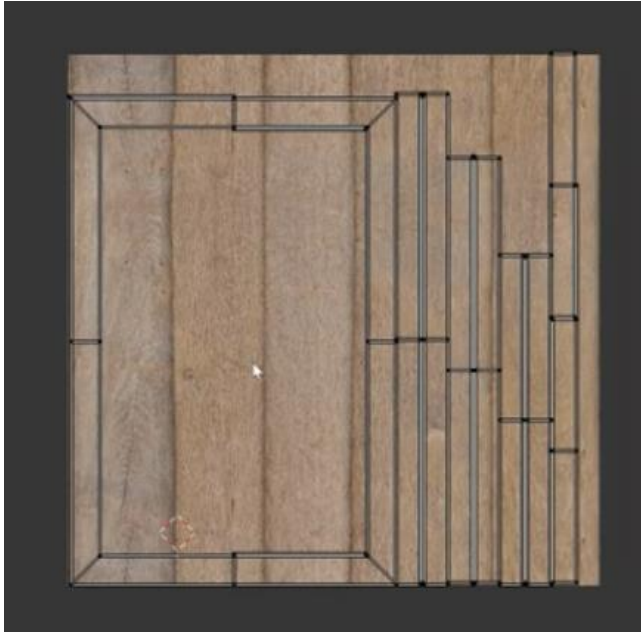
Next, lets unwrap the window frame. Instead of creating a new material for this object we will link the material from the wood beam since they will have the same material. To link data between objects we will have to make sure that we have the object we want to link from selected as the active object. We decide the active object by selecting it last. It will have a lighter orange outline than the other objects to indicate itself.

To do this we will have to go to object mode and select the window frame and then select the wood beam in that order. Now hit “ctrl+L” and select material from the list. Notice here that it is the same shortcut as we used when we selected a UV-island in the UV/image editor. The shortcuts in Blender are context sensitive meaning that the same shortcut may be used for different purposes in different editors, different modes or while selecting different things.

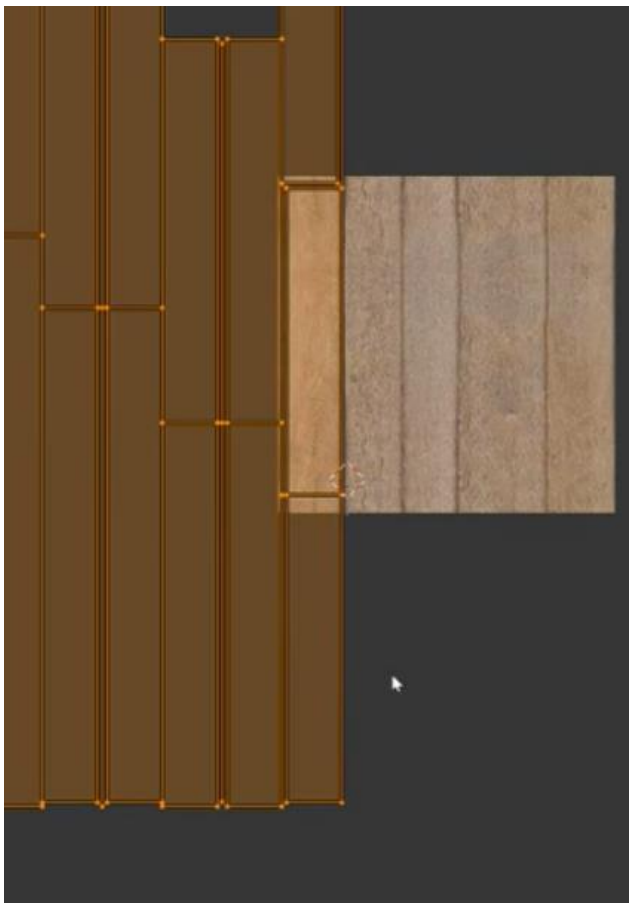


Even if we have the same materials on those objects though they will not look the same at this point. The reason is that the window frame is not UV-unwrapped yet.

Select the window frame, go into edit mode and hit “u” for the UV-unwrap menu. Use “Smart UV project”. Make sure that stretch is not enabled.

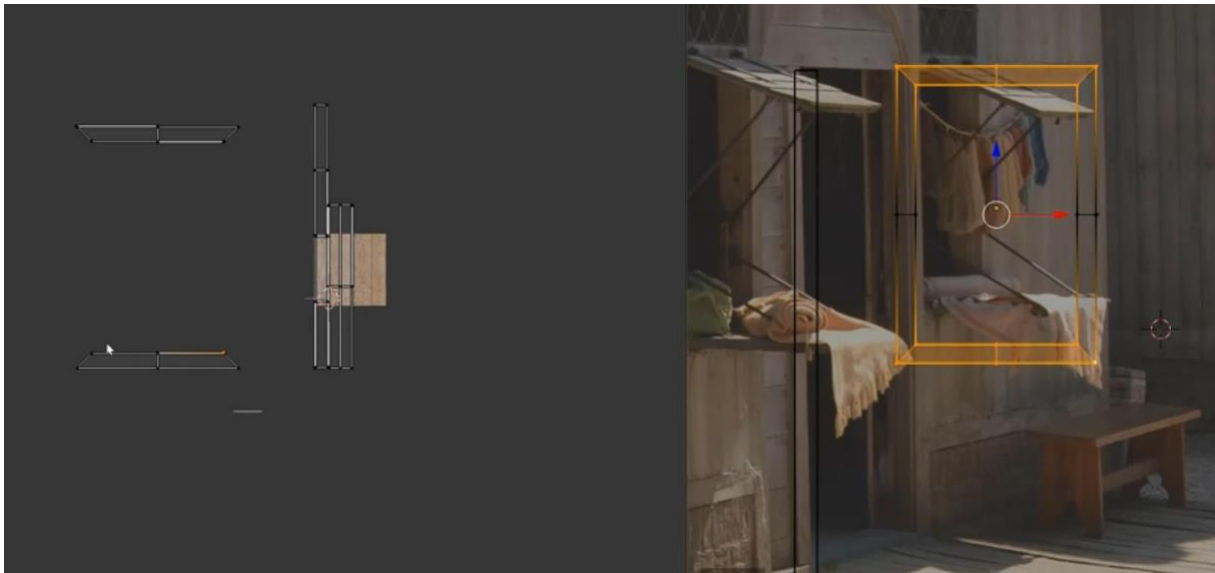


Select everything with “A” in the UV/Image editor. Scale it up so that the width of a bar fits within a wooden plank of the texture.



Move the vertical faces of the UV-map onto the wood texture, as to align them along each wood beam to avoid the seams in the texture ending up in the middle of any given part of the window frame.

To filter what you see in the UV/Image editor you can deselect parts of your mesh in the 3D view and only the selected parts will show in the UV/image editor. Try selecting the horizontal bars in wireframe mode to select it and everything behind. Now only those parts will be available in the UV/Image editor. Select them and rotate by 90 degrees. You can do this with “**R**” and press 90 and enter, use the minus button on the keyboard to reverse the rotation. You can also use the magnet icon to enable snapping and rotate until it is an exact 90-degree rotation. It is available for the UV/Image editor as well as the 3D viewport.



When done you will see the second kind of seam mentioned earlier in the 3D view where two different textures meet, and an unnatural or sharp edge is visible. In this case it is hard to avoid, and we don't need to bother about this since a window frame will most likely be constructed with these angles here anyway even if they won't be as sharp in reality.

